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【54】名　稱：多媒體無線播放裝置
CORDLESS MULTIMEDIA BROADCASTING EQUIPMENT

【21】申請案號：092219021　　【22】申請日期：中華民國 92 (2003) 年 10 月 27 日

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[57]申請專利範圍：

1.一種多媒體無線播放裝置，係於殼座前側具設一套槽，以供套置音源電器；殼座內組裝一具有發射電路之控制電路，殼座表側顯露有控制電路之操作鍵及插接頭；插接頭係突伸於套槽內，以供與音源電器之輸出插座對應插接；使用時，控制電路可配合發射電路以所設定之頻率將音源電器輸出之音源訊號發射出，另配合一般收音機調至相同頻率，以接收並播放出音源電器所輸出之音樂或聲音。

2.如申請專利範圍第1項所述多媒體無線播放裝置，其中，該控制電路之操作鍵包含功能鍵、上調整鍵及下調整鍵，以便選定操作功能及調整發射頻率。

3.如申請專利範圍第1項或第2項所述多媒體無線播放裝置，其中，該控制電路具有顯示器，以供顯示操作

訊息及發射頻率。

4.如申請專利範圍第1項所述多媒體無線播放裝置，其中，該控制電路具有可儲存多個頻率之記憶體，以供利用操作鍵選擇設定，並促使發射電路依該選定之頻率傳送音源電器所輸出之音源訊號。

5.如申請專利範圍第1項所述多媒體無線播放裝置，其中，該控制電路，包含操作鍵、顯示器、插接頭、電源電路、微控器、記憶體及發射電路；操作鍵，包含功能鍵、上調整鍵及下調整鍵，以供選定操作功能及調整發射頻率；顯示器，可顯示操作訊息及發射頻率；插接頭，可供音源電器之輸出插座對應插接，以便連線並將音源訊號傳予發射電路；電源電路，可將電源轉換成一穩定電源以提供控制電路使用；微控器，可配合內部預先燒錄之程式，以控制各電路之運作；記憶體，可為記憶發射頻率、音量及基本資料；發射電路，為數位式調頻發射電路，可受微控器觸發、控制，以依設定之頻率傳送音源訊號。

6.如申請專利範圍第5項所述多媒體無線播放裝置，其中，該發射電路前後連接有濾波放大電路，以便將音源電器輸出之音源訊號濾波放大。

7.如申請專利範圍第5項所述多媒體無線播放裝置，其中，該控制電路之記憶體內儲存多個頻率，以供利用操作鍵選擇設定，並配合微控器促使發射電路依選定之頻率傳送音源電器所輸出之音源訊號。

8.如申請專利範圍第5項所述多媒體無線播放裝置，其中，該電源電路係以電池為電源。

9.如申請專利範圍第5項所述多媒體無

線播放裝置，其中，該電源電路係連接有插座以供插接車用電源接頭，而可取得車上用電作為電源。

10.如申請專利範圍第5項所述多媒體無線播放裝置，其中，該電源電路連接有插座以供插接電源轉換器，而可取得家用電作為電源。

11.如申請專利範圍第1項或第5項所述多媒體無線播放裝置，其中，該控制電路具有一充電電路，充電電路係由電源電器提供電源，且其並與上述插接頭連線；再者，音源電路之輸出插座除傳輸音源訊號外，尚連接充電電池；當音源電器之輸出插座與插接頭插接時，音源電器不僅可將音源訊號傳至發射電路，且充電電路亦可經由插接頭及輸出插座對充電電池充電。

12.如申請專利範圍第1項或第5項所述多媒體無線播放裝置，其中，該控制電路具有一充電電路，充電電路係由電源電路提供電源，且充電電路之輸出端連接充電接頭；當音源電器之輸出插座與插接頭插接時，音源電器之充電插座亦可與充電接頭插接，故音源電器傳輸音源訊號之同時，充電電路亦可經由充電接頭、充電插座對音源電器內之充電電池充電。

13.如申請專利範圍第11項或第12項所述多媒體無線播放裝置，其中，該電源電路係以電池為電源。

14.如申請專利範圍第11項或第12項所述多媒體無線播放裝置，其中，該電源電路係連接有插座以供插接車用電源接頭，而可取得車上用電作為電源。

15.如申請專利範圍第11項或第12項所述多媒體無線播放裝置，其中，該電源電路連接有插座以供插接電源

轉換器，而可取得家用電作為電源。

圖式簡單說明：

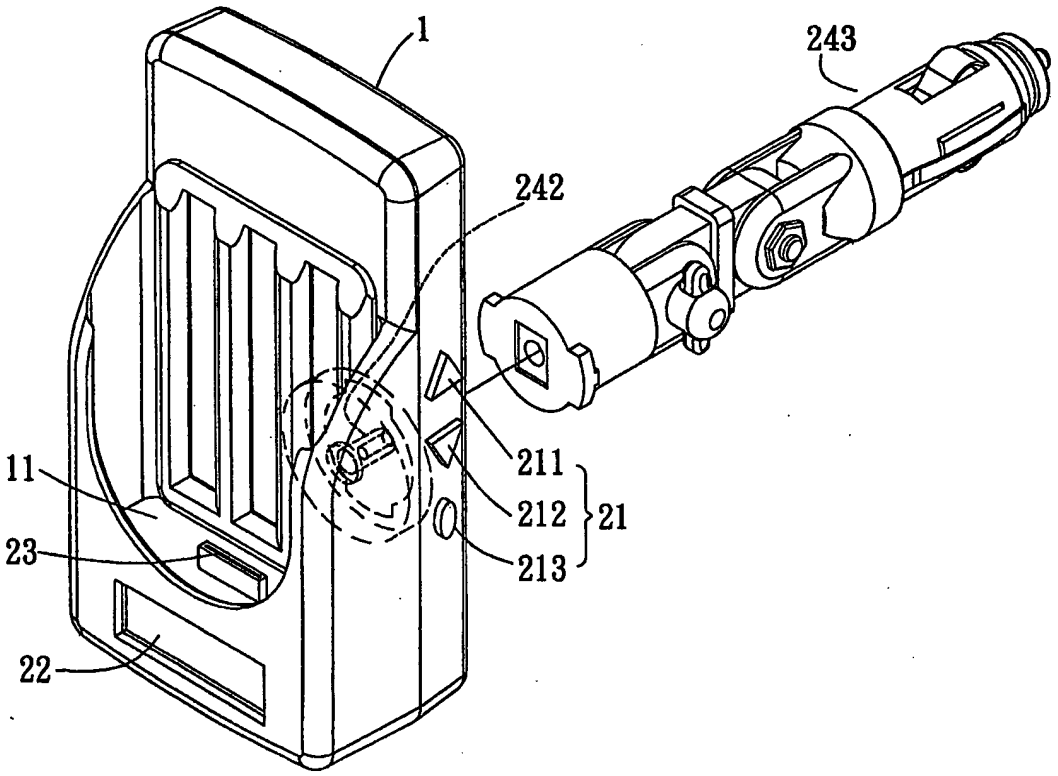
第一圖：本創作之外觀結構示意圖

第二圖：本創作之其一結構實施例之電路方塊圖

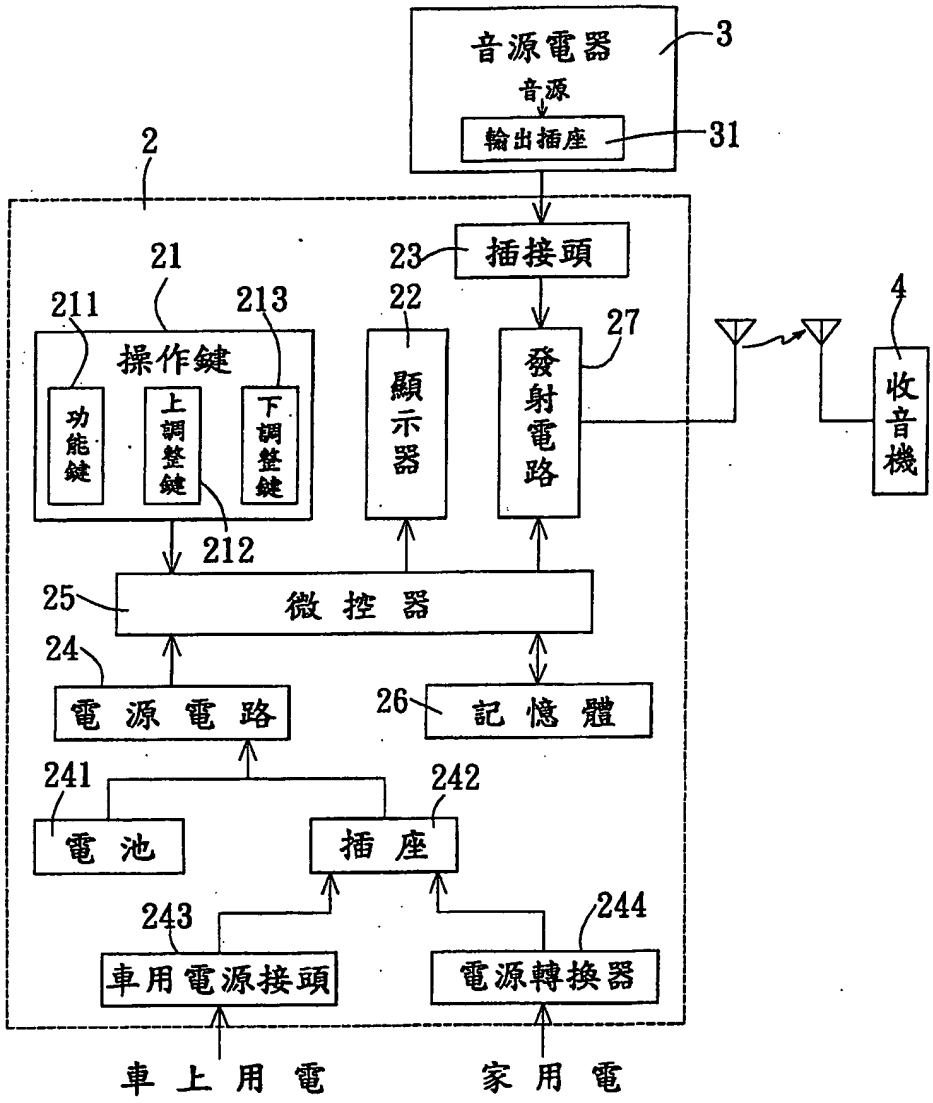
第三圖：本創作之其二結構實施例之電路方塊圖

第四圖：本創作之其三結構實施例之電路方塊圖

5. 第五圖：本創作之其四結構實施例之電路方塊圖



第一圖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3
音源
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2
插接頭
23
21
211
213
22
27
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功能鍵
上調整鍵
下調整鍵
顯示器
發射電路
收音機
212
25
微控器
24
26
電源電路
記憶體
241
242
電池
插座
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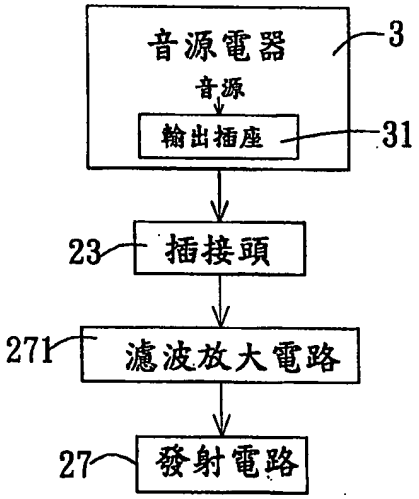
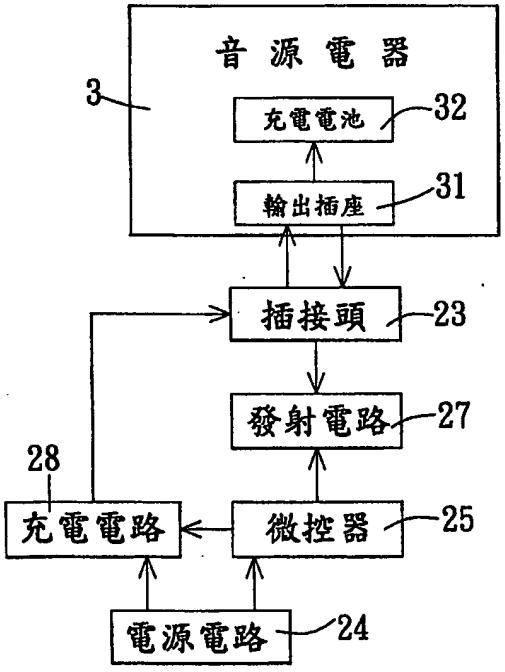
車用電源接頭
電源轉換器
車上用電
家用電

第二圖


音源電器
3
音源
輸出插座
31
23
插接頭
271
濾波放大電路
27
發射電路

第三圖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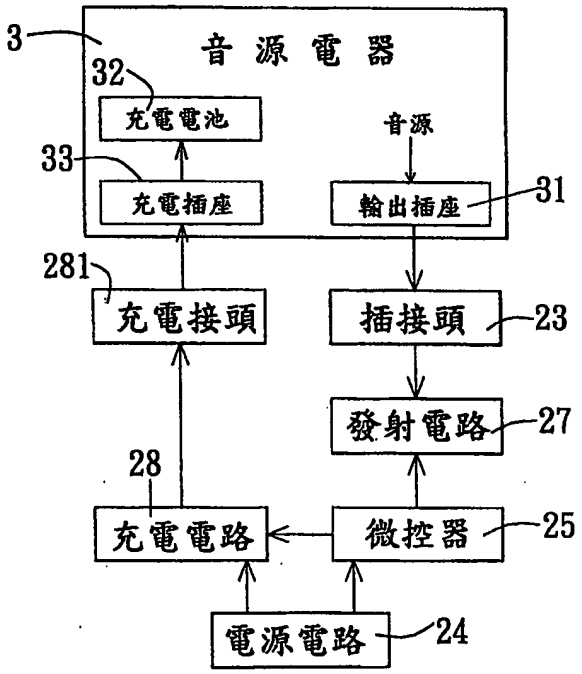
充電電池
32
輸出插座
31
插接頭
23
發射電路
27
28
充電電路
微控器
25
電源電路
24

第四圖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音源
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輸出插座
31
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插接頭
23
發射電路
27
28
充電電路
微控器
25
電源電路
24

第五圖

Cordless Multimedia Broadcasting Equipment

[FIELD OF THE INVENTION]

The present invention relates to a cordless multimedia broadcasting equipment, and more particularly, a "cordless multimedia broadcasting equipment" capable of receiving a sound appliance therein and transmitting the audio signals outputted therefrom via radio, which are further received and broadcasted by a general FM receiver, so as to achieve the effect of simple operation and hi-fi broadcasting by using the audio equipment of the FM receiver.

[BACKGROUND TO THE INVENTION]

At the present day of high technology, there are many electronic products capable of producing music or sounds such as sound appliances of an MP3 player or a mobile phone.

Among them, an mp3 player is a player specially used to broadcast mp3 music. MP3 is abbreviated from MPEG (Movie Picture Experts Group) 1 Layer 3 and thus belongs to the MPEG-1 level, the development goal of which is to reduce the load of information media upon transmission and keep the same media quality.

Sound appliances such as the aforementioned mp3 player or a

mobile phone are usually connected to headphones or speakers for broadcasting. However, a better sound quality cannot be obtained therefrom.

Accordingly, the inventor intends to provide an alternative cordless multimedia broadcasting equipment capable of being used with a general FM receiver so as to obtain a broadcasting effect of better sound quality.

[SUMMARY OF THE INVENTION]

The present invention relates to a cordless multimedia broadcasting equipment, comprising a covering tank provided on the front end of a shell thereof for receiving a sound appliance; a controlling circuit including an emitting circuit assembled inside the shell; operating keys and a plug of the controlling circuit provided on the surface of sides of the shell, in which the plug is extended into the cover tank for connecting to a corresponding outlet socket of the sound appliance. When in use, the controlling circuit, together with the emitting circuit, transmits audio signals outputted from the sound appliance at a set frequency, and music or sounds outputted from the sound appliance can be received and broadcasted by using a general FM receiver tuned to the same frequency.

[BRIEF DESCRIPTION OF THE DRAWINGS]

Fig. 1 is a schematic diagram showing the appearance and structure of the present invention.

Fig. 2 is a block diagram showing the circuit of the first structural embodiment according to the present invention.

Fig. 3 is a block diagram showing the circuit of the second structural embodiment according to the present invention.

Fig. 4 is a block diagram showing the circuit of the third structural embodiment according to the present invention.

Fig. 5 is a block diagram showing the circuit of the fourth structural embodiment according to the present invention.

[DESCRIPTION OF PREFERRED EMBODIMENTS]

For easily understanding the technical means and achievable effect of the present invention, the present invention will be described as below with reference to the drawings and reference numerals:

First, referring to Figs. 1 and 2, a cordless multimedia broadcasting equipment of the present invention is provided with a covering tank (11) on the front end of a shell (1) thereof for receiving a sound appliance (3) of a music player (for example, a mp3 player) or a mobile phone; a controlling circuit (2) is assembled inside the shell (1); operating keys (21), a display (22) and a plug (23) of the controlling circuit (2)

are provided on the surface of sides of the shell (1); the plug (23) is extended into the cover tank (11) for connecting to a corresponding outlet socket (31) of the sound appliance(3).

In addition to the aforementioned operating keys (21), display (22) and plug (23), the controlling circuit (2) further comprises a power circuit (24), a microcontroller (25), a memory (26) and an emitting circuit (27). The operating keys (21) comprise a function key (211), an upper adjusting key (212), a lower adjusting key (213), etc., for selecting operation functions and tuning transmitting frequencies. The display (22) can be a liquid crystal display (LCD) or a LED (Light Emitting Diode) font display, for displaying operation messages and transmitting frequencies. The plug (23) is used for connecting to the corresponding outlet socket (31) of the sound appliance (3) so as to transmit audio signals to the emitting circuit (27). The power circuit (24) can use a battery (241) as the power supply, or connect to a socket (242) for connecting to a vehicle power plug (243) or a transformer (244) so as to obtain a vehicle power supply or a household power supply as the power supply, whereby a proper stable power supply is provided to each circuit of the controlling circuit (2). The microcontroller (25) works together with a built-in program to control the operation of

circuits. The memory (26) can be an electrically erasable programmable read-only memory (EEPROM), for storing data of transmitting frequencies and sound volumes. The emitting circuit (27) is a digital frequency modulation emitting circuit, which can be actuated and controlled by the microcontroller (25) to transmit audio signals of music or sounds at a set frequency.

Before using the cordless multimedia broadcasting equipment of the present invention, a sound appliance (3) of a music player (for example, an mp3 player) or a mobile phone is placed onto the covering tank (11) with the outlet socket (31) of the sound appliance (3) connected with the plug (23). Further, depending on occasions, a battery (241) can be used as the power supply, or a vehicle power plug (243) or a transformer (244) can be optionally used to obtain a vehicle power supply or a household power supply as the power supply.

When in use, operation modes can be selected by pressing the function key (211) of the operating keys (21), operation functions can be selected and transmitting frequencies of the emitting circuit (27) can be tuned by pressing the upper and lower adjusting keys (212), (213), and operation messages and transmitting frequencies can be displayed by the display (22). For example, depending on the design of the controlling

circuit (2), digital FM channels of 88MHz ~ 108MHz can be provided for a general FM receiver (4), in which the channel number as tuned and determined is stored in the memory (26) by the microcontroller (25).

When the cordless multimedia broadcasting equipment of the present invention operates, the microcontroller (25) actuates the emitting circuit (27) to transmit the audio signals outputted from the sound appliance (3) via radio at a default channel. Subsequently, the signals can be received by a general FM receiver (4) tuned in the same channel, and transformed to sounds which human can hear for broadcasting by the operation of internal circuits thereof and speakers.

For example, an mp3 player as the sound appliance (3) can be placed onto the covering tank (11) with the outlet socket (31) and the plug (23) connected to transmit signals, and then by using the cordless multimedia broadcasting equipment of the present invention, the signals are transmitted via radio to be received by a general FM receiver (4) for broadcasting, so that music played from the mp3 player can be received and broadcasted by the FM receiver (4). Therefore, no matter on a vehicle, in the office or at home, stereo sounds and music of high quality can be broadcasted by the cooperation of FM receiver (4) and sound appliance (3).

Referring to Fig. 3 which shows a second structural embodiment of the present invention, the emitting circuit (27) has a filter amplifying circuit (271) connected to the front end thereof, for filtering and amplifying the audio signals outputted from the sound appliance (3) so as to obtain a better sound quality.

Referring to Fig. 4 which shows a third structural embodiment of the present invention, the microcontroller (25) is connected with a charging circuit (28) and the power supply to the charging circuit (28), which is also connected to the aforementioned plug (23), is provided by the power circuit (24). In addition to transmission of audio signals, the outlet socket (31) of the sound appliance (3) is further connected to a rechargeable battery (32). When the outlet socket (31) of the sound appliance (3) and the plug (23) are connected, not only the sound appliance (3) can transmit the audio signals to the emitting circuit (27), but also the charging circuit (28) can charge the rechargeable battery (32) through the plug (23) and the outlet socket (31).

Referring to Fig. 5 which shows a fourth structural embodiment of the present invention, the microcontroller (25) is connected with a charging circuit (28) and the power supply

to the charging circuit (28), the output terminal of which is connected to a charging plug (281), is provided by the power circuit (24). When the outlet socket (31) of the sound appliance (3) and the plug (23) are connected, the charging socket (33) of the sound appliance (3) can be also connected to the charging plug (281) so that while the sound appliance (3) transmits the audio signals, the charging circuit (28) can also charge the rechargeable battery (32) in the sound appliance (3) through the charging plug (281) and the charging socket (33).

Further, referring to Fig. 2, the memory (26) of the controlling circuit (2) stores therein a plurality of (at least 10) frequencies to be selected and set by using the operating keys (21), and the microcontroller (25) enables the emitting circuit (27) to transmit the audio signals outputted from the sound appliance (3) at a selected frequency.

From the above-mentioned structures, it can be understood that the present invention indeed has the following advantages:

1. The present invention is not only a fixing stand for securely receiving the sound appliance (3) therein, but also a cordless broadcasting equipment for transmitting the audio signals outputted from the sound appliance (3)

via radio with a general FM receiver (4) receiving and broadcasting the same. Therefore, the present invention has double functions of fixing and broadcasting.

2. Further, after receiving the sound appliance (3), the audio signals outputted from the sound appliance (3) are transmitted via radio, and received and broadcasted by a general FM receiver (4). Therefore, no signal cable is necessary, and thus the present has an effect of simple operation.

3. The present invention transmits the audio signals outputted from the sound appliance (3) via radio with a general FM receiver (4) receiving and broadcasting the same. Therefore, an audio effect of stereo and Hi-Fi sound quality can be achieved by using the audio equipment of the FM receiver (4) itself.

4. The present invention is provided with a charging circuit (28) so that while the sound appliance (3) is placed thereon, the rechargeable battery (32) in the interior thereof can be charged.

In summary, the embodiments of the present invention can indeed achieve the effects as expected, and the concrete

structures as disclosed above have not been seen in the products of the same category and open to the public before filing an application. Therefore, the present invention completely meets the provisions and requirements of the Patent Act, and a utility model patent application is filed in this regard according to the law. It is respectfully solicited that your Office after examination will grant the patent.

[DESCRIPTION OF REFERENCE NUMERALS]

1	shell
11	covering tank
2	controlling circuit
21	operating keys
211	function key
212	upper adjusting key
213	lower adjusting key
22	display
23	plug
24	power circuit
241	battery
242	socket
243	power plug
244	transformer
25	microcontroller
26	memory

27	emitting circuit
271	filter amplifying circuit
28	charging circuit
281	charging plug
3	sound appliance
31	outlet socket
32	rechargeable battery
33	charging socket
4	FM receiver

What is claimed is:

1. A cordless multimedia broadcasting equipment, comprising a covering tank provided on the front end of a shell thereof for receiving a sound appliance; a controlling circuit including an emitting circuit assembled inside the shell; operating keys and a plug of the controlling circuit provided on the surface of sides of the shell, in which the plug is extended into the cover tank for connecting to a corresponding outlet socket of the sound appliance; when in use, the controlling circuit, together with the emitting circuit, transmitting audio signals outputted from the sound appliance at a set frequency, and music or sounds outputted from the sound appliance being received and broadcasted by using a general FM receiver tuned to the same frequency.

2. The cordless multimedia broadcasting equipment according to claim 1, wherein said operating keys of the controlling circuit comprises a function key, an upper adjusting key, and a lower adjusting key, for selecting operation functions and tuning transmitting frequencies.

3. The cordless multimedia broadcasting equipment according to claim 1 or 2, wherein said controlling circuit has a display, for displaying operation messages and

transmitting frequencies.

4. The cordless multimedia broadcasting equipment according to claim 1, wherein said controlling circuit has a memory capable of storing a plurality of frequencies to be selected and set by using the operating keys and the emitting circuit is enabled to transmit the audio signals outputted from the sound appliance at a selected frequency.

5. The cordless multimedia broadcasting equipment according to claim 1, wherein said controlling circuit comprises operating keys, a display, a plug, a power circuit, a microcontroller, a memory and an emitting circuit; the operating keys comprise a function key, an upper adjusting key and a lower adjusting key, for selecting operation functions and tuning transmitting frequencies; the display can display operation messages and transmitting frequencies; the plug is used for connecting to the corresponding outlet socket of the sound appliance so as to transmit audio signals to the emitting circuit; the power circuit can transform a power supply to a stable power supply for the controlling circuit's use; the microcontroller works together with a built-in program to control the operation of each circuit; the memory can store transmitting frequencies, sound volumes and basic information; the emitting circuit is a digital

frequency modulation emitting circuit, which can be actuated and controlled by the microcontroller to transmit audio signals at a set frequency.

6. The cordless multimedia broadcasting equipment according to claim 5, wherein said emitting circuit has a filter amplifying circuit connected to the front and rear ends thereof, for filtering and amplifying the audio signals outputted from the sound appliance.

7. The cordless multimedia broadcasting equipment according to claim 5, wherein said memory of the controlling circuit stores therein a plurality of frequencies to be selected and set by using the operating keys, and the microcontroller enables the emitting circuit to transmit the audio signals outputted from the sound appliance at a selected frequency.

8. The cordless multimedia broadcasting equipment according to claim 5, wherein said power circuit uses a battery as the power supply.

9. The cordless multimedia broadcasting equipment according to claim 5, wherein said power circuit connects to a socket for connecting to a vehicle power plug so as to obtain

a vehicle power supply as the power supply.

10. The cordless multimedia broadcasting equipment according to claim 5, wherein said power circuit connects to a socket for connecting to a transformer so as to obtain a household power supply as the power supply.

11. The cordless multimedia broadcasting equipment according to claim 1 or 5, wherein said controlling circuit has a charging circuit and the power supply to the charging circuit, which is also connected to said plug, is provided by the power circuit; in addition to transmission of audio signals, the outlet socket of the sound appliance is further connected to a rechargeable battery; when the outlet socket of the sound appliance and the plug are connected, not only the sound appliance can transmit the audio signals to the emitting circuit, but also the charging circuit can charge the rechargeable battery through the plug and the outlet socket.

12. The cordless multimedia broadcasting equipment according to claim 1 or 5, wherein said controlling circuit has a charging circuit and the power supply to the charging circuit, the output terminal of which is connected to a charging plug, is provided by the power circuit; when the

outlet socket of the sound appliance and the plug are connected, the charging socket of the sound appliance can be also connected to the charging plug so that while the sound appliance transmits the audio signals, the charging circuit can also charge the rechargeable battery in the sound appliance through the charging plug and the charging socket.

13. The cordless multimedia broadcasting equipment according to claim 11 or 12, wherein said power circuit uses a battery as the power supply.

14. The cordless multimedia broadcasting equipment according to claim 11 or 12, wherein said power circuit connects to a socket for connecting to a vehicle power plug so as to obtain a vehicle power supply as the power supply.

15. The cordless multimedia broadcasting equipment according to claim 11 or 12, wherein said power circuit connects to a socket for connecting to a transformer so as to obtain a household power supply as the power supply.

Abstract

This invention relates to cordless multimedia broadcasting equipment. A covering tank put on the front end of a shell is used for receiving power source equipment. The controlling circuit of emitting circuit is disposed inside a shell; surface of a shell appears operating keys and plugs. The plugs are extended into a cover tank for connecting to outlet of power source. When aforementioned broadcasting equipment is running, sound could be emitted from power source equipment by controlling circuit and emitting circuit. When frequency of above broadcasting equipment is the same as radio's, broadcasting equipment could receive and broadcast music from power source equipment.

(Re-translation)

The present invention relates to a cordless multimedia broadcasting equipment, comprising a covering tank provided on the front end of a shell thereof for receiving a sound appliance; a controlling circuit including an emitting circuit assembled inside the shell; operating keys and a plug of the controlling circuit provided on the surface of sides of the shell, in which the plug is extended into the cover tank for connecting to a corresponding outlet socket of the sound appliance. When in use, the controlling circuit,

together with the emitting circuit, transmits audio signals outputted from the sound appliance at a set frequency, and music or sounds outputted from the sound appliance can be received and broadcasted by using a general FM receiver tuned to the same frequency.

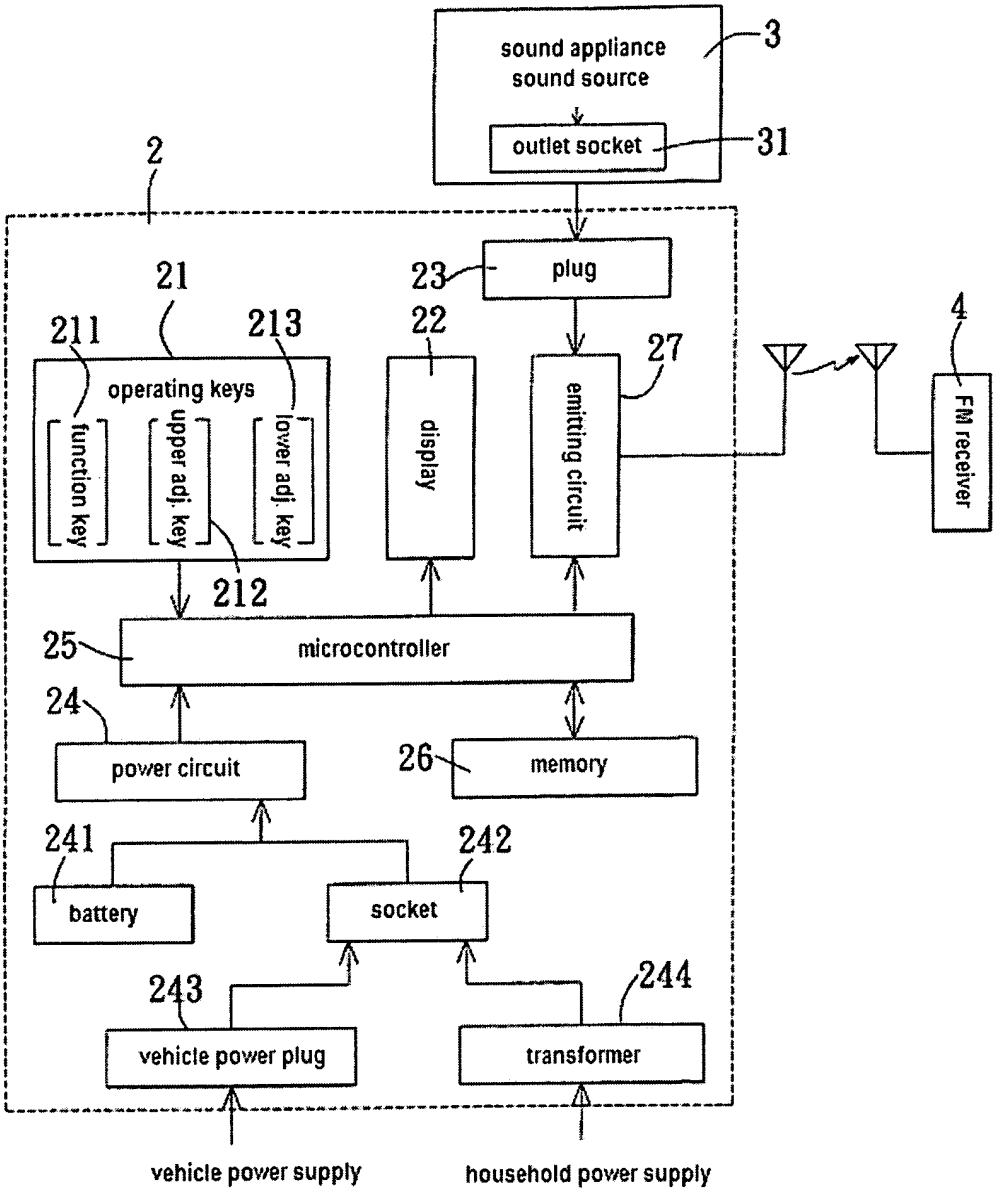
sound appliance
sound source
3
outlet socket
31
2
21
23
plug
211
213
22
27
4
operating keys
function key
upper adj. key
lower adj. key
display
emitting circuit
FM receiver
212
25
microcontroller
24
power circuit
26
memory
241
242
battery
socket
243
244
vehicle power plug
transformer
vehicle power supply
household power supply

Fig. 2

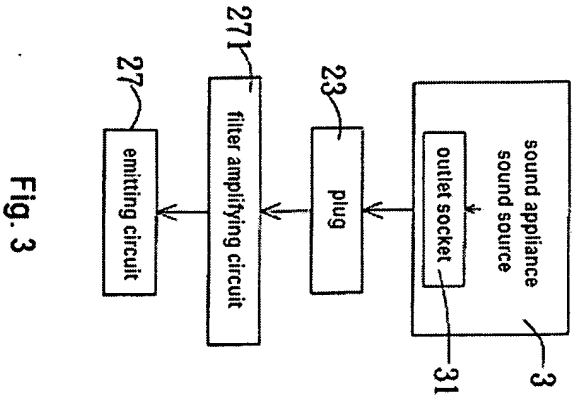
sound appliance
sound source
outlet socket
31
3
plug
23
filter amplifying circuit
271
emitting circuit
27

Fig. 3

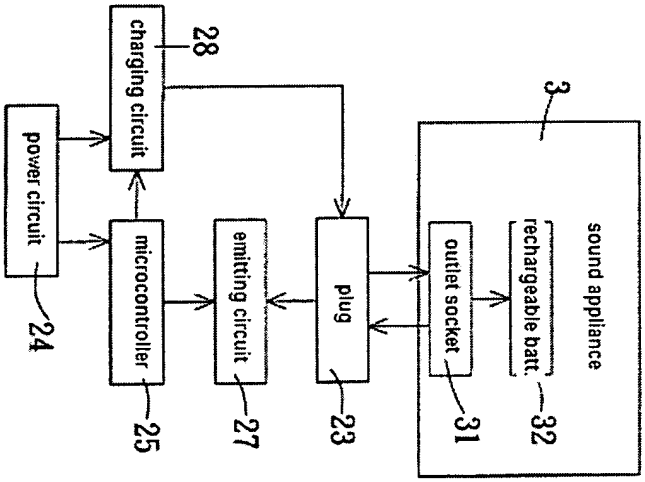
3
sound appliance
rechargeable batt.
32
outlet socket
31
plug
23
emitting circuit
27
microcontroller
25
charging circuit
28
power circuit
24

Fig. 4

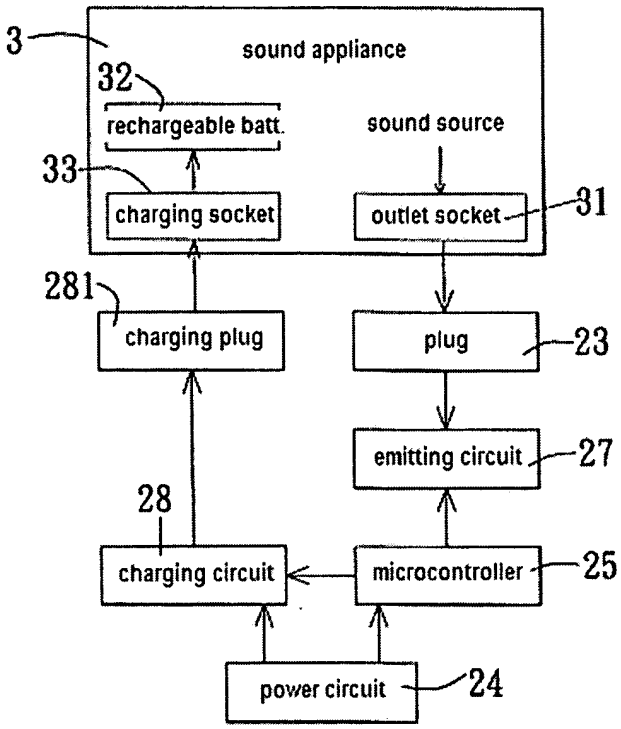
3
sound appliance
32
rechargeable batt.
sound source
33
charging socket
outlet socket
31
281
charging plug
plug
23
emitting circuit
27
28
charging circuit
microcontroller
25
power circuit
24

Fig. 5